REMARKS

In the non-final Office Action that was mailed April 3, 2007, the Examiner allowed claims 31-34 and rejected claims 1-5, 7, 9-18, and 20-27. The Examiner objected to claims 6, 8, 19 and 28-30 as being dependent on a rejected base claim, but stated that these claims would be allowable if rewritten in independent form to include the limitations of the base claims and any intervening claims. Applicants have amended claims 1, 3-4, 7-10, 22, 24, 26, and 29-30, and have added new claims 36-39. The amendments add no new matter. Applicants have canceled claims 5-6, 25, and 27-28. Claims 1-4, 7-24, 26, and 29-39 are pending, and claim 35 stands withdrawn from consideration. Applicants request reconsideration in view of the amendments above and the following remarks.

Claim Amendments

Applicants have amended claim 1 to include the limitations of original claim 6, now canceled, but have deleted the diameter limitation.

Applicants have amended each of claims 3-4 to depend from new claim 36.

Applicants have amended claims 7-10 to depend from amended claim 1.

Applicants have amended claim 22 to more particularly define the subject matter sought to be patented, and have included the limitations of original claim 25, now canceled.

Applicants have amended claim 24 to be independent by including the limitations of the base claim, original claim 22, and have also amended to more particularly define the subject matter sought to be patented.

Applicants have amended claim 26 to include all limitations of dependent claim 28 (indicated to be allowable).

Applicants have rewritten claim 29 (indicated to be allowable) in independent form to all include all limitations of the base claim and any intervening claims. Claim 29, as amended, has substantially identical scope to original claim 29.

Applicants have rewritten claim 30 (indicated to be allowable) in independent form to include all limitations of the base claim and any intervening claims.

The amendments add no new matter. Support for the amendments can be found throughout Applicants' specification as originally filed (e.g., at original claims 1, 3-10, 22, and 24-30, and at figures 1-3 and the corresponding specification description).

Response to Claim Rejections

Claims 1-21

The Examiner rejected claims 1, 2, 4, 13, 15 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,846, 191 to Brockway et al. (hereinafter, "Brockway '191"). Of these, claims 1 is independent. The Examiner also rejected claims 3, 5, 7, 9-12, 14, 16-18, and 20-21, which depend either directly or indirectly from claim 1, under 35 U.S.C. § 103(a) as being unpatentable over various references. Claims 5 and 6 have been canceled.

Amended claim 1 recites an implantable pressure sensing device that includes "a pressure sensor" and "a pressure transmission catheter having a proximal portion, a mid portion, a distal portion, a distal port, and a lumen extending therethrough, the proximal portion of the catheter connected to the pressure sensor." The device also includes "a pressure transmission fluid disposed in the lumen and a barrier disposed proximate the distal port to retain the fluid in the lumen." The device further includes "a surface modification on an outside surface of the catheter, wherein the surface modification promotes tissue in-growth."

Claim 1, as amended, is patentable over the references of record, including Brockway '191, for reasons similar to those indicated by the Examiner in the present Action regarding the allowability of original claim 6. For example, Brockway '191 does not disclose or suggest an implantable pressure sensing device that includes a catheter and "a surface modification on an outside surface of the catheter, wherein the surface modification promotes tissue in-growth," as recited in claim 1. Also, dependent claims 2, 4, 13 and 15 are patentable over Brockway '191 for at least the same reasons. Similarly, the remaining dependent claims are patentable over the references, as none of the references cure the deficiencies of Brockway '191 because none of the references teach or suggest a catheter with "a surface modification on an outside surface of the catheter, wherein the surface modification promotes tissue in-growth."

Accordingly, Applicants request that the Examiner remove the anticipation rejections of claims 1, 2, 4, 13, 15, and the 35 U.S.C. § 103(a) rejections of claims 3, 7, 9-12, 14, 16-18, and 20-21.

Claims 22-25

The Examiner rejected claims 22 and 23 under 35 U.S.C. § 102(b) as being anticipated by Brockway '191. Separately, the Examiner also rejected claims 22 and 24 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,019,729 to Itoigawa et al. (hereinafter, "Itoigawa"), and rejected claims 22 and 25 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,160,448 to Jackson (hereinafter, "Jackson"). Applicants have amended claims 22 and 24 as described above.

Claim 22, as amended, recites an implantable pressure sensing device that includes "a pressure sensor configured to be implanted in a body of a patient," and "a pressure transmission catheter having an open proximal end, a closed distal end, and a liquid-filled lumen extending therethrough, the proximal end of the catheter connected to the pressure sensor, wherein the catheter comprises a tube, and wherein the distal end of the catheter is closed by a sleeve placed over the tube." By way of illustration, figures 5U and 5T of Applicants' specification as originally filed show thin membranes 28 that comprise an additional tubular component. *See also* paragraph [0066]. In each of these implementations, "distal port 36 is eliminated in favor a thin membrane 28." *See* paragraph [0065].

Claim 22 is patentable over each of Brockway '191, Itoigawa, and Jackson, because none of the references teach or suggest all of the limitations of claim 22.

Brockway '191 discloses, with reference to figure 1, a pressure measurement device 10 that includes a pressure transmission catheter 20. The pressure transmission catheter has a distal tip 22 that is inserted into an artery 24, where a fluid pressure within the artery may be sensed. *See* column 5, lines 8-20.

Brockway '191 does not anticipate or render obvious claim 22 because Brockway '191 does not disclose or suggest an implantable pressure sensing device that includes a catheter

"wherein the distal end of the catheter is closed by a sleeve placed over the tube," as recited in claim 22.

Itoigawa discloses a "sensor mechanism-equipped catheter." *See* title. A sensor assembly 3 includes an outer tube 4 and an inner tube 5. *See* column 5, lines 54-56. The outer tube 4 has a distal opening to which a piston 7 is fitted. *See* column 5, lines 66-67. A distortion gage 12 is formed in a portion of a semiconductor pressure sensor chip 10, which is joined to wall surface of a cutout portion 9 of the inner tube 5, *see* column 6, lines 7-24. The pressure sensor chip 10 and distortion gage 12 are shown near a distal end (that is, near piston 7) of the sensor assembly. *See* figures 3a, 4a, 4b, 5a, 5b, 8a, 9a, 9b. A flat cable 13 extends through the interior of the catheter tube and is connected to the sensor chip 10 by a relay tab 14, bonding wires 15, and a bonding pad. *See* column 6, lines 24-30.

Itoigawa does not anticipate or render obvious claim 22 because Itoigawa does not disclose or suggest an implantable pressure sensing device that includes a catheter, where "the proximal end of the catheter [is] connected to the pressure sensor," as recited in claim 22. In contrast, the Itoigawa device shows a pressure sensor near the distal end of the catheter, *see* figures 3a, 4a, 4b, 5a, 5b, 8a, 9a, 9b, and signals are transmitted through the catheter to a proximal end of the catheter by a flat cable 13, *see* column 6, lines 24-30. As such, the Itoigawa catheter, because it includes the pressure sensor near its distal end, must be sized to include the semiconductor pressure sensor chip 10 and distortion gage 12, which may increase the size of the catheter as compared to devices, like the device of claim 22, where "the proximal end of the catheter [is] connected to the pressure sensor." Advantages that may be realized with some implementations of the pressure sensing device of Applicants' claim 22 are not contemplated by Itoigawa, including producing catheters of sufficiently small size for certain pressure sensing applications.

Jackson discloses a cannula that is filled with liquid, and includes at its distal end a balloon 12. *See* column 2, lines 10-14. At a proximal end, the cannula is connected to an external strain gauge 14 that remains outside the body of a patient. *See* figure 1; column 1, lines 9-10; column 2, lines 10-15.

Jackson does not anticipate or render obvious claim 22 because Jackson does not disclose or suggest an implantable pressure sensing device that includes "a pressure sensor configured to be implanted in a body of a patient," as recited in claim 22. In contrast, the strain gauge pressure sensor disclosed in Jackson is not configured to be implanted in a body of a patient, and remains external to the body of the patient throughout the procedure.

For at least these reasons, claim 22 defines subject matter that is patentable over Brockway '191, Itoigawa, and Jackson, whether alone or in combination, as does dependent claim 23. Accordingly, Applicants ask the Examiner to remove the anticipation rejections of these claims.

Amended claim 24 is patentable over the references of record for at least the reasons discussed above with reference to claim 22, and Applicants ask the Examiner to remove the anticipation rejection of this claim.

Claims 26-30

The Examiner rejected claims 26 and 27 under 35 U.S.C. 103(a) as being unpatentable over Brockway '191 in view of U.S. Patent No. 6,712,772 to Cohen et al. (hereinafter, "Cohen"). Claim 26 has been amended as described above. Claim 27 has been canceled.

Because claim 26, as amended, is a rewriting of claim 28 in independent form to include the limitations of the base claim and any intervening claims, and because claim 28 was indicated to be allowable, amended claim 26 should be allowed.

Accordingly, Applicants ask the Examiner to remove the 35 U.S.C. 103(a) rejection of claim 26.

New Claims

Applicants have added the following new claims:

New dependent claim 36 depends from amended claim 1, and has substantially identical scope to original claim 6 (indicated allowable), now canceled. Claim 36 is patentable over the

references of record for at least the reasons indicated by the Examiner in the present Action regarding the allowability of original claim 6.

New independent claim 37 includes the limitations of original claim 8, but does not include the original limitation "wherein the distal portion of the catheter has an inside diameter that is larger than an inside diameter of the mid portion of the catheter" (hereinafter, "the diameter limitation"). Claim 37 is patentable over the references of record for reasons similar to those indicated by the Examiner in the present Action regarding the allowability of original claim 8.

New independent claim 38 includes the limitations of original claim 19, but does not include the diameter limitation. Claim 38 is patentable over the references of record for reasons similar to those indicated by the Examiner in the present Action regarding the allowability of original claim 19.

New independent claim 39 recites an implantable pressure sensing device that includes "a pressure sensor, a pressure transmission catheter having a proximal portion, a distal portion, a distal port, and a lumen extending therethrough, the proximal portion of the catheter connected to the pressure sensor, a pressure transmission fluid disposed in the lumen, and barrier disposed proximate the distal port to retain the fluid in the lumen." Claim 39 also recites that the "pressure transmission catheter containing the pressure transmission fluid and barrier collectively act as a low-pass filter to filter out frequencies above a predetermined threshold frequency." Claim 39 is patentable over the references of record for reasons similar to those indicated by the Examiner in the present Action regarding the allowability of original claim 31.

New claims 36-39 add no new matter. Support for the new claims can be found throughout Applicants' specification as originally filed (e.g., at original claims 1, 5, 6, 8, 19 and 31, at figures 3 and 4A-4E and the corresponding discussion, and at paragraphs [0077] to [0082]).

CONCLUSION

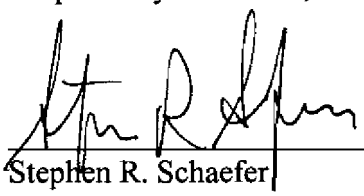
Applicants submit that each of claims 1-4, 7-24, 26, and 29-39 is in condition for allowance, and ask the Examiner to issue a notice of allowance.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please charge Deposit Account No. 06-1050 in the amount of $525 for excess claim fees and $525 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: Oct. 3, 2007



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